



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

True Copy

AUG 12 1997

Les Case
Corporate Engineer
Interstate Nuclear Services
811 South Edisto Avenue
Columbia, South Carolina 29205

SUBJECT: DECOMMISSIONING FUNDING PLAN

Dear Mr. Case:

We have completed our review of your June 2, 1997, letter enclosing the revised Decommissioning Cost Estimating Tables for your Royersford, Portsmouth and Honolulu facilities. Your new estimates appear to be acceptable and we have no questions at this time. Please instruct your bank to make the necessary changes to the Letter of Credit and have them forward the updated document to this office.

If you have questions concerning this letter, please contact this office.

Sincerely,

James L. Montgomery
Senior Health Physicist
Materials Branch

Docket No. 030-06869
License No. 53-13668-01
Control No. 572513

10052



9709150269 970812
PDR ADOCK 03006869
C PDR

Interstate Nuclear Services

-2-

bcc:

Docket File
WCFO Inspection File
LFARB, T-9 E10

DOCUMENT NAME: G:\572513.JM

To receive copy of document, indicate in box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

RIV:MB	RIV:MB	RIV:MB					
K Prendergast	BPrange	JMontgomery					
/ 197	/ 197	8/12/97					

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NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
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Walnut Creek, California 94596-5368

ORC

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RIV:MB	RIV:MB	RIV:MB					
K Prendergast	BPrange	JMontgomery					
1/97	1/97	8/12/97					

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BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03218
Status Code: 0
Fee Category: 6A
Exp. Date: 20041231
Fee Comments:
Decom Fin Assur Regd: Y

RECEIVED
NRC
RIV WCFO

97 JUN 15 AM 11:35

LICENSE FEE TRANSMITTAL

A. REGION IV - WCFO

1. APPLICATION ATTACHED

Applicant/Licensee: INTERSTATE NUCLEAR SERV. CORP.
Received Date: 970606
Docket No.: 3006869
Control No.: 572513
License No.: 53-13668-01
Action Type: Fin. Assurance

2. FEE ATTACHED

Amount: None
Check No.: None

3. COMMENTS

Signed
Date

Jan Garcia
6-16-97

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered (Y/N))

1. Fee Category and Amount 6A

FEE NOT REQUIRED

2. Correct Fee Paid Application may be processed for: Financial Assurance
Amendment
Renewal
License

3. OTHER

Signed
Date

Detoy Myster
6/12/97

97 JUN 11 PM 4:22

RECEIVED BY LFMS	
Date	<u>6/11/97</u>
Log	<u>Jan 1 WCFO</u>
By	<u>Rem</u>
Date Completed	<u>6/12/97</u>

7/8/97

TELEPHONE OR VERBAL CONVERSATION
RECORD

TIME

☐ INCOMING CALL ☒ OUTGOING CALL ☐ VISIT

PERSON CALLING: <i>Jim Montgomery</i>	OFFICE/ADDRESS:	PHONE NUMBER:
PERSON CALLED: <i>Lee Case</i>	OFFICE/ADDRESS: <i>IN S</i>	PHONE NUMBER:

CONVERSATION

SUBJECT - *Deficiency Phone Call MC# 572513*

SUMMARY -

The spread sheets for decommissioning costs at Honolulu & Portsmouth Landfills are missing from 6/2/97 letter. Also need a request to delete the Massachusetts site since it is now an Agreement State.

REFERRED TO:	<input type="checkbox"/> ADVISE ME ON ACTION TAKEN
ACTION REQUESTED:	INITIALS:
	DATE:
ACTION TAKEN:	INITIALS:
	DATE:



INTERSTATE NUCLEAR SERVICES
A SUBSIDIARY OF UNIFIRST CORPORATION

Financial Assur.

030-06869
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97 JUN -6 AM 11:42

June 2, 1997

United States Nuclear Regulatory Commission
Region IV
1450 Maria Lane
Walnut Creek, California 94596

Attn: Beth Prange
Senior Health Physicist (Licensing)
Nuclear Materials and Fuel Fabrication Branch

Re: License 37-23341-01	Royersford, PA	\$642,583
Re: License 39-19727-01	Portsmouth, VA	\$321,967
Re: License <u>53-13668-01</u>	Honolulu, HI	\$246,768

		\$1,211,318

Dear Ms. Prange:

In order to account for inflation and changes to our facilities, we periodically review of our Decommissioning Funding Plan and update the decommissioning cost estimates. Attached are the new estimates for the INS nuclear laundry facilities referenced above.

As you know, the surety we provide to your agency for future decommissioning takes the form of a bank Letter of Credit. This instrument is currently in force and is automatically renewed on its anniversary date, without adjustment to the amount, unless we notify the bank that your agency has authorized that it be amended.

Please review the attached information. When we get your written approval, we will instruct our bank to make the necessary changes to the Letter of Credit. They will then send it to your agency as soon as it is updated. Please call Mike Fuller or me if there are any questions.

Sincerely,

Les Case
Corporate Engineer
INS Corporation

cc: M. Fuller
H. Murphy

Attachment: Cost estimate in NRC-recommended format

572513

APPENDIX F
 COST ESTIMATING TABLES

1. Planning and Preparation

Task	Table 1 Work Days					Calendar Days	Total Cost
	Super- visor	Foreman	H.P.	Clerical			
1. Prepare Documentation for Regulatory Agencies	5	10		5		10	\$7,191
2. Submit Decommissioning Plan to regulators	3	10		2		10	\$5,682
3. Develop Work Plans	4	8	3	1		8	\$6,607
4. Procure Special Equipment		5				5	\$1,887
5. Staff Training		2	5	2		5	\$3,176
6. Study of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	4	12	12	1		12	\$11,962
7. Other							
8. Total	16	47	20	11		50	\$36,504

Table 2

Unit Cost for Workers (Independent Contractors)			Worker Cost Per	
Position	Basic Salaries (\$/yr)	Overhead Rate	Year	Day
Supervisor	\$76,000	78%	\$135,280	\$541
Foreman	\$53,000	78%	\$94,340	\$377
Craftsman	\$33,000	78%	\$58,740	\$235
Technician	\$30,000	78%	\$53,400	\$214
Health Physicist	\$60,000	78%	\$106,800	\$427
Laborer	\$21,000	78%	\$37,380	\$150
Clerical	\$20,000	78%	\$35,600	\$142

2. Decontamination/Dismantling of Radioactive Facility Components *

For details, see Waste Volume Summary

Table 3
 Work Days

	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
1. Decon/dismantle:						
Sorting Hoods (D)*		2.2	4.3	6.5	2.2	\$2,808
Lint Collectors (D)		3.5	7.0	10.5	3.5	\$4,535
Washers & Dryers (D)		45.7	91.4	137.2	45.7	\$59,241
Lab & Work Benches (D)		7.2	14.4	21.6	7.2	\$9,330
Sink Drain (D)		3.2	6.4	9.6	3.2	\$4,155
Misc Equipment (D)		14.9	29.8	44.8	14.9	\$19,339
Mobile Units (D)		0.0	0.0	0.0	0.0	\$0
2. Decon/dismantle:						
Process Ductwork (D)		7.5	15.0	22.5	7.5	\$9,723
Air Filters & Fans (D)		3.1	6.3	9.4	3.1	\$4,081
Water Filters, Pumps, Pipe (D)		9.9	19.7	29.6	9.9	\$12,785
Above-ground Tanks (D)		9.3	18.7	28.0	9.3	\$12,095
Washer Drain Trench & Pit (W)		4.6	9.2	13.8	4.6	\$5,961

*(D): Decontaminate most of the component to unrestricted release levels.

*(W): Package the component and dispose at a low-level waste site.

Table 3 (continued)
 Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
3. Decon/Dis- mantle Building						
-Floors and Walls		38.7	77.4	116.1	38.7	\$50,136
4. Decon/Dis- mantle Service Facilities						
-Maintenance Shop						
-Decontamination						
-Ventilation Systems		See Page F-2				
-Other						
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhumed and package contaminated soil)		See Page F-2				
-Remove Sewer Discharge Pipe Line to First Manhole		2.1	4.2	6.4	2.1	\$2,752

INS Corp.
Royersford, PA
05/29/97

Table 3 (continued)
Work Days

Page F-4
Process 3

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
6. Monitor for compliance reclean and remonitor.		27	54	54	27	\$30,951
7. Total of Table 3					179	\$227,891

Table 4

Equipment/Supply =====	Quantity =====	Rate =====	Cost =====
Mobile Decon Unit (Transport, Consumables)	1	14000	\$14,000
Plasma arc welder rental per month	4	350	\$1,400
Air compressor (Sullair 185) rental per month	5	650	\$3,250
Five-head floor scabbler rental per week	4	450	\$1,800
Hand scabbler (needle scaler) purchase	1	350	\$350
HEPA Vacuum Purchase	1	2200	\$2,200
Dozer with operator per hour	40	75	\$3,000
			=====
Total Equipment Rental and Purchase			\$26,000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Class A (unstable) Waste	Volume (m ^ 3)	No. of Containers	Type of Container	Unit Cost of Container	Total Container Cost
Total	47	18	B-25	\$300	\$5,400

Table 6

Waste Type= Class A unstable	No. of Shipment	Unit Cost for Shipping incl. driver	Round Trip Distance Shipped	Vendor	Trans- portation Cost	
Soil	2	\$2.00	per mile	4498	Envirocare	\$17,992
Eqpt	1	\$2.00	per mile	1242	MSC	\$2,484
	=====					=====
Total	3					\$20,476

Table 7

Direct Burial Charge, including all fees
 Direct Burial Vendor

\$3,180 per m³
 Envirocare

Class A Unstable Waste
 Soil and Concrete Rubble

Class A Unstable Waste
 Equipment sent to Waste Processor

Burial Volume (m ³)	Unit Cost of Burial	Total Burial Cost	Approx Volume (m ³)	Approx Density (lb/m ³)	Actual Weight (lbs)	Rate (\$/lb)	Charge (\$)
47.3	\$3,180	\$150,564	44	500	21849	\$1.40	\$30,588

Container required
 Direct burial
 No processing

No container needed for equipment.

Lab Waste Analysis \$10,000

Total: Bury, Process, Lab Analysis \$191,152

4. Restoration of Contaminated Areas of Facility Ground

Table 8
 Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Backfill and Restore Site		5	5		5	\$3,204

5. Final Radiation Survey

Table 9
 Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Survey and Report		8	3	3	8	\$3,439

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10
Work Days

Task	Supervisor	Foreman	Clerical	Calendar Days	Total Cost
Table 10 is not applicable. Site will be free released.					\$0

Summary:

Table 1: Planning and Preparation	\$36,504
Table 3: Dismantling and Decontamination	\$227,891
Table 4: Equipment Rental	\$26,000
Table 5: Containers for Radwaste	\$5,400
Table 6: Transportation of Radwaste	\$20,476
Table 7: Waste Processing/Disposal	\$191,152
Table 8: Site Restoration	\$3,204
Table 9: Final Radiation Survey	\$3,439
Table 10: Site Stabilization and Surveillance	\$0
	=====
Sub Total	\$514,066
Contingency (25%)	\$128,517
Final Total	\$642,583

Process 1 Applied to Soil, Concrete, Rubble

Qty	Unit	Component	Calendar Days per unit	Calendar Days Total	Waste (m ^ 3) per Unit	Waste (m ^ 3) Total
==	==	=====	=====	=====	=====	=====
11	m	Concrete Drain Trenches & Soil Under	0.200	2.20	0.290	3.19
49	m	Soil Adjacent to Buried Sewer Line	0.030	1.47	0.050	2.45
74	m	Soil Adjacent to Sink Drains Under Floor	0.030	2.22	0.015	1.11
18	m ^ 2	Concrete Pit Wall and Soil Behind (Note 5)	0.100	1.80	0.150	2.70
4	m ^ 2	Concrete Pit Bottom and Soil Under (Note 5)	0.150	0.60	0.500	2.00
830	m ^ 2	Wall Area Likely Needing Decon (Note 1)	0.015	12.45	0.001	0.83
460	m ^ 2	Concrete Floor & Soil Underneath (Note 2)	0.030	13.80	0.060	27.60
***	m ^ 2	Conc. Floor, Surface Contam Only (Note 3)	0.010	12.44	0.006	7.46
0	m ^ 3	Sand from Sludge Drying Tanks	0.100	0.00	1.000	0.00
				=====		=====
				46.98		47.34
				Days		m ^ 3

Process 3 Applied to Equipment Includes Grit Blast or Power Wash Decon			Calendar	Calendar	Waste	Waste
Qty.	Unit	Component	Days per unit	Days Total	Pounds per Unit	Pounds Total
==	==	=====	=====	=====	=====	=====
3	ea	Large Washers, >200 lbs Cap'y	5.417	16.25	1760	5280
2	ea	Small Washers, <=200 lbs Cap'y	3.233	6.47	560	1120
3	ea	Large Dryers, >200 lbs Cap'y	5.500	16.50	1360	4080
2	ea	Small Dryers, <=200 lbs Cap'y	3.250	6.50	260	520
1	ea	HEPA Exhaust Fans	0.167	0.17	0	0
1	ea	Sorting Hoods	2.167	2.17	500	500
7	ea	Laundry Monitors (ALM)	1.233	8.63	140	980
1	ea	HEPA Filter Housings with Plenum	2.167	2.17	340	340
1	ea	Shaker Screen Water Filters (Note 6)	1.125	1.12	300	300
1	ea	Compactors	1.125	1.12	220	220
3	ea	Floor Scales	1.083	3.25	70	210
2	ea	Personnel Monitors	0.083	0.17	0	0
3	ea	Lint Collectors, Dry Type (Note 4)	1.167	3.50	110	330
1	ea	Bag or Respirator Dryers	0.625	0.62	60	60
3	ea	Small Metal Tanks <600 gal	0.583	1.75	165	494
0	ea	Medium Metal Tanks 600-3000 gal	1.167	0.00	482	0
0	ea	Large Metal Tanks >3000 gal (Note 5)	2.333	0.00	884	0
1	ea	Tanks, Poly or Fiberglass, <600 gal	0.583	0.58	42	42
0	ea	Tanks, Poly or Fiberglass, 600-3000 gal	1.167	0.00	122	0
3	ea	Tanks, Poly or Fiberglass, >3000 gal	2.333	7.00	223	670
1	ea	Conveyors	1.125	1.12	25	25
8	ea	Pumps	0.067	0.53	100	800
27	ea	Lab Benches, Sort & Fold Tables	0.267	7.20	4	108
0	ea	Sludge Drying Sand Bed (excl. sand)	0.667	0.00	626	0
1	ea	Sludge Dryer with Filter Press	1.208	1.21	1920	1920
24	ea	HEPA Filters, Metal Frame 24x24x12	0.034	0.82	8	192
0	ea	Mobile Units, 40' (excl. eqpt.)	6.333	0.00	420	0
183	m	Process Ductwork	0.041	7.50	12	2196
49	m	Buried Sewer Pipe (excl. soil)	0.013	0.65	18	882
210	m	In-plant Wastewater Pipe	0.033	7.00	1	210
74	m	Sink Drain Lines Under Floor (excl soil)	0.013	0.99	5	370
				=====	=====	=====
				105.00		21849
				Days		lbs

Notes:

- 1 Walls likely needing decontamination typically include portions of these rooms: Water Treatment, Wash Room, Tank Farm. The walls often need decon only on the low parts.
- 2 Rooms likely to require removal of concrete slab and soil underneath typically include parts of these rooms: Water Treatment, Waste Storage, Sort Room, Wash Room, Tank Farm, Tank Room.
- 3 Rooms likely to require surface decontamination of concrete slab typically include these rooms: Storage, Loading Dock, Production Room, Mezzanine, Lab, Office.
- 4 Count each wet lint collector as two dry lint collectors.
- 5 Count special tanks as follows: Morris lamella=2 large steel tanks. Columbia lamella=1 large steel tank. Morris stainless steel pit=1 large and one medium steel tank. Non stainless steel pits are to be counted as concrete pits (assumed to leak).
- 6 If shaker screen has an integral tank, count that tank as one medium steel tank.

Process Descriptions:

Process 1: 4-person team. Remove equipment. Cut only as needed to help load it into the van. Ship to a waste segregator and processor. Charged by the pound.

Process 2: 4-person team. Remove and strip equipment in preparation for metal melt, removing controls, motor windings, and non-metallics. Ship to a metal melt facility.

Process 3: 6-person team. Remove and strip equipment; cut metal pieces into small accessible parts suitable for introduction into the mobile grit blaster and/or power washer. Survey and free release parts that are clean; ship remainder to waste processor or metal melt vendor.

INS Corp.
Portsmouth, VA
05/29/97

APPENDIX F
COST ESTIMATING TABLES

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Page E-1
Process 1
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1. Planning and Preparation

		Table 1 Work Days					Total Cost
Task		Super- visor	Foreman	H.P.	Clerical	Calendar Days	
1.	Prepare Documentation for Regulatory Agencies	5	10		5	10	\$7,191
2.	Submit Decommissioning Plan to regulators	3	10		2	10	\$5,682
3.	Develop Work Plans	4	8	3	1	8	\$6,607
4.	Procure Special Equipment		5			5	\$1,887
5.	Staff Training		2	5	2	5	\$3,176
6.	Study of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	4	12	12	1	12	\$11,962
7.	Other						
8.	Total	16	47	20	11	50	\$36,504

572513

Table 2

Unit Cost for Workers (Independent Contractors)			Worker Cost Per	
Position	Basic Salaries (\$/yr)	Overhead Rate	Year	Day
Supervisor	\$76,000	78%	\$135,280	\$541
Foreman	\$53,000	78%	\$94,340	\$377
Craftsman	\$33,000	78%	\$58,740	\$235
Technician	\$30,000	78%	\$53,400	\$214
Health Physicist	\$60,000	78%	\$106,800	\$427
Laborer	\$21,000	78%	\$37,380	\$150
Clerical	\$20,000	78%	\$35,600	\$142

2. Decontamination/Dismantling of Radioactive Facility Components *

For details, see Waste Volume Summary

Table 3
Work Days

	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
1. Decon/dismantle:						
Sorting Hoods (W)*		0.5		1.5	0.5	\$413
Lint Collectors (W)		0.0		0.0	0.0	\$0
Washers & Dryers (W)		3.0		9.0	3.0	\$2,478
Lab & Work Benches (W)		0.6		1.8	0.6	\$496
Sink Drain (W)		0.1		0.3	0.1	\$80
Misc Equipment (W)		0.8		2.3	0.8	\$619
Mobile Units (W)		0.0		0.0	0.0	\$0
2. Decon/dismantle:						
Process Ductwork (W)		0.6		1.8	0.6	\$508
Air Filters & Fans (W)		0.7		2.2	0.7	\$611
Water Filters, Pumps, Pipe (W)		1.0		3.1	1.0	\$859
Above-ground Tanks (W)		4.0		12.0	4.0	\$3,304
Washer Drain Trench & Pit (W)		6.3		18.9	6.3	\$5,212

*(D): Decontaminate most of the component to unrestricted release levels.

*(W): Package the component and dispose at a low-level waste site.

Table 3 (continued)
Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
3. Decon/Dis- mantle Building						
-Floors and Walls		4.8	9.5	14.3	4.8	\$6,181
4. Decon/Dis- mantle Service Facilities						
-Maintenance Shop						
-Decontamination						
-Ventilation Systems		See Page F-2				
-Other						
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhumed and package contaminated soil)		See Page F-2				
-Remove Sewer Discharge Pipe Line to First Manhole		2.1	4.2	6.3	2.1	\$2,721

INS Corp.
Portsmouth, VA
05/29/97

Table 3 (continued)
Work Days

Page F-4
Process 1

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
6. Monitor for compliance reclean and remonitor.		15	30	30	15	\$17,195
7. Total of Table 3					40	\$40,679

Table 4

Equipment/Supply =====	Quantity =====	Rate =====	Cost =====
Mobile Decon Unit (Transport, Consumables)	0	14000	\$0
Plasma arc welder rental per month	4	350	\$1,400
Air compressor (Sullair 185) rental per month	5	650	\$3,250
Five-head floor scabbler rental per week	4	450	\$1,800
Hand scabbler (needle scaler) purchase	1	350	\$350
HEPA Vacuum Purchase	1	2200	\$2,200
Dozer with operator per hour	40	75	\$3,000
			=====
Total Equipment Rental and Purchase			\$12,000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Class A (unstable) Waste	Volume (m ^ 3)	No. of Containers	Type of Container	Unit Cost of Container	Total Container Cost
Total	17	7	B-25	\$300	\$2,100

Table 6

Waste Type= Class A unstable	No. of Shipment	Unit Cost for Shipping incl. driver	Round Trip Distance Shipped	Vendor	Trans- portation Cost	
Soil	1	\$2.00	per mile	4714	Envirocare	\$9,428
Eqpt	2	\$2.00	per mile	1066	MSC	\$4,264
	=====					=====
Total	3					\$13,692

Table 7

Direct Burial Charge, including all fees \$3,180 per m³
Direct Burial Vendor Envirocare

Class A Unstable Waste
Soil and Concrete Rubble

Class A Unstable Waste
Equipment sent to Waste Processor

Burial Volume (m ³)	Unit Cost of Burial	Total Burial Cost	Approx Volume (m ³)	Approx Density (lb/m ³)	Actual Weight (lbs)	Rate (\$/lb)	Charge (\$)
17.0	\$3,180	\$54,067	117	500	58492	\$1.40	\$81,889

Container required No container needed for equipment.
Direct burial
No processing

Lab Waste Analysis \$10,000

Total: Bury, Process, Lab Analysis \$145,956

4. Restoration of Contaminated Areas of Facility Ground

Table 8
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Backfill and Restore Site		5	5		5	\$3,204

5. Final Radiation Survey

Table 9
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Survey and Report		8	3	3	8	\$3,439

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10
Work Days

Task	Supervisor	Foreman	Clerical	Calendar Days	Total Cost
Table 10 is not applicable. Site will be free released.					\$0

Summary of Decommissioning Cost Estimates:

Table 1: Planning and Preparation	\$36,504
Table 3: Dismantling and Decontamination	\$40,679
Table 4: Equipment Rental	\$12,000
Table 5: Containers for Radwaste	\$2,100
Table 6: Transportation of Radwaste	\$13,692
Table 7: Waste Processing/Disposal	\$145,956
Table 8: Site Restoration	\$3,204
Table 9: Final Radiation Survey	\$3,439
Table 10: Site Stabilization and Surveillance	\$0
	=====
Sub Total	\$257,574
Contingency (25%)	\$64,393
Final Total	\$321,967

Process 1 Applied to Soil, Concrete, Rubble

Qty	Unit	Component	Calendar Days per unit	Calendar Days Total	Waste (m ^ 3) per Unit	Waste (m ^ 3) Total
==	==	=====	=====	=====	=====	=====
6.3	m	Concrete Drain Trenches & Soil Under	0.200	1.26	0.290	1.83
42	m	Soil Adjacent to Buried Sewer Line	0.030	1.26	0.050	2.10
2	m	Soil Adjacent to Sink Drains Under Floor	0.030	0.06	0.015	0.03
46	m ^ 2	Concrete Pit Wall and Soil Behind (Note 5)	0.100	4.60	0.150	6.90
3	m ^ 2	Concrete Pit Bottom and Soil Under (Note 5)	0.150	0.45	0.500	1.50
66	m ^ 2	Wall Area Likely Needing Decon (Note 1)	0.015	0.99	0.001	0.07
55	m ^ 2	Concrete Floor & Soil Underneath (Note 2)	0.030	1.65	0.060	3.30
213	m ^ 2	Conc. Floor, Surface Contam Only (Note 3)	0.010	2.13	0.006	1.28
0	m ^ 3	Sand from Sludge Drying Tanks	0.100	0.00	1.000	0.00
				=====		=====
				12.40		17.00
				Days		m ^ 3

Process 1 Applied to Equipment Remove Equipment, No Major Pretreatment			Calendar	Calendar	Waste	Waste
Qty.	Unit	Component	Days per unit	Days Total	Pounds per Unit	Pounds Total
=====			=====	=====	=====	=====
2	ea	Large Washers, >200 lbs Cap'y	0.500	1.00	9000	18000
1	ea	Small Washers, <=200 lbs Cap'y	0.250	0.25	3000	3000
0	ea	Large Dryers, >200 lbs Cap'y	0.500	0.00	7000	0
7	ea	Small Dryers, <=200 lbs Cap'y	0.250	1.75	1500	10500
1	ea	HEPA Exhaust Fans	0.250	0.25	0	0
2	ea	Sorting Hoods	0.250	0.50	2500	5000
2	ea	Laundry Monitors (ALM)	0.250	0.50	3000	6000
1	ea	HEPA Filter Housings with Plenum	0.250	0.25	1700	1700
0	ea	Shaker Screen Water Filters (Note 6)	0.125	0.00	1500	0
0	ea	Compactors	0.125	0.00	1200	0
1	ea	Floor Scales	0.125	0.13	700	700
1	ea	Personnel Monitors	0.125	0.13	0	0
0	ea	Lint Collectors, Dry Type (Note 4)	0.250	0.00	600	0
0	ea	Bag or Respirator Dryers	0.125	0.00	300	0
0	ea	Small Metal Tanks <600 gal	0.500	0.00	824	0
0	ea	Medium Metal Tanks 600-3000 gal	1.000	0.00	2410	0
2	ea	Large Metal Tanks >3000 gal (Note 5)	2.000	4.00	4418	8836
0	ea	Tanks, Poly or Fiberglass, <600 gal	0.500	0.00	208	0
0	ea	Tanks, Poly or Fiberglass, 600-3000 gal	1.000	0.00	609	0
0	ea	Tanks, Poly or Fiberglass, >3000 gal	2.000	0.00	1116	0
0	ea	Conveyors	0.125	0.00	250	0
2	ea	Pumps	0.100	0.20	100	200
6	ea	Lab Benches, Sort & Fold Tables	0.100	0.60	80	480
0	ea	Sludge Drying Sand Bed (excl. sand)	0.250	0.00	1564	0
0	ea	Sludge Dryer with Filter Press	0.250	0.00	5000	0
16	ea	HEPA Filters, Metal Frame 24x24x12	0.015	0.24	40	640
0	ea	Mobile Units, 40' (excl. eqpt.)	2.000	0.00	2100	0
41	m	Process Ductwork	0.015	0.62	60	2460
42	m	Buried Sewer Pipe (excl. soil)	0.020	0.84	18	756
42	m	In-plant Wastewater Pipe	0.020	0.84	5	210
2	m	Sink Drain Lines Under Floor (excl soil)	0.020	0.04	5	10
			=====		=====	
			12.13		58492	
			Days		lbs	

Notes:

- 1 Walls likely needing decontamination typically include portions of these rooms: Water Treatment, Wash Room, Tank Farm. The walls often need decon only on the low parts.
- 2 Rooms likely to require removal of concrete slab and soil underneath typically include parts of these rooms: Water Treatment, Waste Storage, Sort Room, Wash Room, Tank Farm, Tank Room.
- 3 Rooms likely to require surface decontamination of concrete slab typically include these rooms: Storage, Loading Dock, Production Room, Mezzanine, Lab, Office.
- 4 Count each wet lint collector as two dry lint collectors.
- 5 Count special tanks as follows: Morris lamella=2 large steel tanks. Columbia lamella=1 large steel tank. Morris stainless steel pit=1 large and one medium steel tank. Non stainless steel pits are to be counted as concrete pits (assumed to leak).
- 6 If shaker screen has an integral tank, count that tank as one medium steel tank.

Process Descriptions:

Process 1: 4-person team. Remove equipment. Cut only as needed to help load it into the van. Ship to a waste segregator and processor. Charged by the pound.

Process 2: 4-person team. Remove and strip equipment in preparation for metal melt, removing controls, motor windings, and non-metallics. Ship to a metal melt facility.

Process 3: 6-person team. Remove and strip equipment; cut metal pieces into small accessible parts suitable for introduction into the mobile grit blaster and/or power washer. Survey and free release parts that are clean; ship remainder to waste processor or metal melt vendor.

INS Corp.
Honolulu, HI
05/28/97

APPENDIX F
COST ESTIMATING TABLES

RECEIVED
Page F-1
Process 1

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1. Planning and Preparation

		Table 1 Work Days					Calendar Days	Total Cost
Task		Super- visor	Foreman	H.P.	Clerical			
1.	Prepare Documentation for Regulatory Agencies	5	10		5	10		\$7,191
2.	Submit Decommissioning Plan to regulators	3	10		2	10		\$5,682
3.	Develop Work Plans	4	8	3	1	8		\$6,607
4.	Procure Special Equipment		5			5		\$1,887
5.	Staff Training		2	5	2	5		\$3,176
6.	Study of Radiological Condition of the Facility (including soil and tailings analysis or ground-water analysis, if applicable)	4	12	12	1	12		\$11,962
7.	Other							
8.	Total	16	47	20	11	50		\$36,504

572 513

Table 2

Unit Cost for Workers (Independent Contractors)			Worker Cost Per	
Position	Basic Salaries (\$/yr)	Overhead Rate	Year	Day
Supervisor	\$76,000	78%	\$135,280	\$541
Foreman	\$53,000	78%	\$94,340	\$377
Craftsman	\$33,000	78%	\$58,740	\$235
Technician	\$30,000	78%	\$53,400	\$214
Health Physicist	\$60,000	78%	\$106,800	\$427
Laborer	\$21,000	78%	\$37,380	\$150
Clerical	\$20,000	78%	\$35,600	\$142

2. Decontamination/Dismantling of Radioactive Facility Components *

For details, see Waste Volume Summary

Table 3
Work Days

	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
1. Decon/dismantle:						
Sorting Hoods (W)*		0.0		0.0	0.0	\$0
Lint Collectors (W)		0.5		1.5	0.5	\$413
Washers & Dryers (W)		1.3		3.8	1.3	\$1,032
Lab & Work Benches (W)		0.1		0.3	0.1	\$83
Sink Drain (W)		0.0		0.0	0.0	\$0
Misc Equipment (W)		0.1		0.4	0.1	\$103
Mobile Units (W)		0.0		0.0	0.0	\$0
2. Decon/dismantle:						
Process Ductwork (W)		0.5		1.4	0.5	\$372
Air Filters & Fans (W)		0.0		0.0	0.0	\$0
Water Filters, Pumps, Pipe (W)		1.1		3.4	1.1	\$925
Above-ground Tanks (W)		0.0		0.0	0.0	\$0
Washer Drain Trench & Pit (W)		8.0		23.9	8.0	\$6,574

*(D): Decontaminate most of the component to unrestricted release levels.

*(W): Package the component and dispose at a low-level waste site.

Table 3 (continued)
Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
3. Decon/Dis- mantle Building						
-Floors and Walls		1.5	2.9	4.4	1.5	\$1,885
4. Decon/Dis- mantle Service Facilities						
-Maintenance Shop						
-Decontamination						
-Ventilation Systems		See Page F-2				
-Other						
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhume and package contaminated soil)		See Page F-2				
-Remove Sewer Discharge Pipe Line to First Manhole		2.7	5.3	8.0	2.7	\$3,434

Table 3 (continued)
Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
6. Monitor for compliance reclean and remonitor.		9	18	18	9	\$10,317
7. Total of Table 3					25	\$25,139

Table 4

Equipment/Supply =====	Quantity =====	Rate =====	Cost =====
Mobile Decon Unit (Transport, Consumables)	0	14000	\$0
Plasma arc welder rental per month	4	350	\$1,400
Air compressor (Sullair 185) rental per month	5	650	\$3,250
Five-head floor scabbler rental per week	4	450	\$1,800
Hand scabbler (needle scaler) purchase	1	350	\$350
HEPA Vacuum Purchase	1	2200	\$2,200
Dozer with operator per hour	40	75	\$3,000
			=====
Total Equipment Rental and Purchase			\$12,000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Class A (unstable) Waste	Volume (m ³)	No. of Containers	Type of Container	Unit Cost of Container	Total Container Cost
Total	20	8	B-25	\$300	\$2,400

Table 6

Waste Type= Class A unstable	No. of Shipment	Unit Cost for Shipping incl. driver	Round Trip Distance Shipped	Vendor	Trans- portation Cost	
Soil	1	\$2.00	per mile	1472	Envirocare	\$2,944
Eqpt	1	\$2.00	per mile	4312	MSC	\$8,624
	=====					=====
Total	2	\$3,500	per shipment, ocean freight		\$7,000	\$11,568

Table 7

Direct Burial Charge, including all fees \$3,180 per m³
Direct Burial Vendor Envirocare

Class A Unstable Waste
Soil and Concrete Rubble

Class A Unstable Waste
Equipment sent to Waste Processor

Burial Volume (m ³)	Unit Cost of Burial	Total Burial Cost	Approx Volume (m ³)	Approx Density (lb/m ³)	Actual Weight (lbs)	Rate (\$/lb)	Charge (\$)
20.1	\$3,180	\$63,916	32	500	15889	\$1.40	\$22,245

Container required
Direct burial
No processing

No container needed for equipment.

Lab Waste Analysis \$10,000

Total: Bury, Process, Lab Analysis \$96,161

4. Restoration of Contaminated Areas of Facility Ground

Table 8
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Backfill and Restore Site		5	5		5	\$5,204

5. Final Radiation Survey

Table 9
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Survey and Report		8	3	3	8	\$3,439

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10
Work Days

Task	Supervisor	Foreman	Clerical	Calendar Days	Total Cost
Table 10 is not applicable. Site will be free released.					\$0

Summary of Decommissioning Cost Estimates:

Table 1: Planning and Preparation	\$36,504
Table 3: Dismantling and Decontamination	\$25,139
Table 4: Equipment Rental	\$12,000
Table 5: Containers for Radwaste	\$2,400
Table 6: Transportation of Radwaste	\$18,568
Table 7: Waste Processing/Disposal	\$96,161
Table 8: Site Restoration	\$3,204
Table 9: Final Radiation Survey	\$3,439
Table 10: Site Stabilization and Surveillance	\$0
	=====
Sub Total	\$197,414
Contingency (25%)	\$49,354
Final Total	\$246,768

Process 1 Applied to Soil, Concrete, Rubble

Qty	Unit	Component	Calendar Days per unit	Calendar Days Total	Waste (m ^ 3) per Unit	Waste (m ^ 3) Total
==	==	=====	=====	=====	=====	=====
6.3	m	Concrete Drain Trenches & Soil Under	0.200	1.26	0.290	1.83
53	m	Soil Adjacent to Buried Sewer Line	0.030	1.59	0.050	2.65
0	m	Soil Adjacent to Sink Drains Under Floor	0.030	0.00	0.015	0.00
49	m ^ 2	Concrete Pit Wall and Soil Behind (Note 5)	0.100	4.90	0.150	7.35
12	m ^ 2	Concrete Pit Bottom and Soil Under (Note 5)	0.150	1.80	0.500	6.00
9	m ^ 2	Wall Area Likely Needing Decon (Note 1)	0.015	0.14	0.001	0.01
35	m ^ 2	Concrete Floor & Soil Underneath (Note 2)	0.030	1.05	0.060	2.10
27	m ^ 2	Conc. Floor, Surface Contam Only (Note 3)	0.010	0.27	0.006	0.16
0	m ^ 3	Sand from Sludge Drying Tanks	0.100	0.00	1.000	0.00
				=====		=====
				11.01		20.10
				Days		m ^ 3

Process 1 Applied to Equipment Remove Equipment, No Major Pretreatment			Calendar Days per unit	Calendar Days Total	Waste Pounds per Unit	Waste Pounds Total
Qty.	Unit	Component				
0	ea	Large Washers, >200 lbs Cap'y	0.500	0.00	9000	0
2	ea	Small Washers, <=200 lbs Cap'y	0.250	0.50	3000	6000
0	ea	Large Dryers, >200 lbs Cap'y	0.500	0.00	7000	0
3	ea	Small Dryers, <=200 lbs Cap'y	0.250	0.75	1500	4500
0	ea	HEPA Exhaust Fans	0.250	0.00	0	0
0	ea	Sorting Hoods	0.250	0.00	2500	0
0	ea	Laundry Monitors (ALM)	0.250	0.00	3000	0
0	ea	HEPA Filter Housings with Plenum	0.250	0.00	1700	0
0	ea	Shaker Screen Water Filters (Note 6)	0.125	0.00	1500	0
0	ea	Compactors	0.125	0.00	1200	0
1	ea	Floor Scales	0.125	0.13	700	700
0	ea	Personnel Monitors	0.125	0.00	0	0
2	ea	Lint Collectors, Dry Type (Note 4)	0.250	0.50	600	1200
0	ea	Bag or Respirator Dryers	0.125	0.00	300	0
0	ea	Small Metal Tanks <600 gal	0.500	0.00	824	0
0	ea	Medium Metal Tanks 600-3000 gal	1.000	0.00	2410	0
0	ea	Large Metal Tanks >3000 gal (Note 5)	2.000	0.00	4418	0
0	ea	Tanks, Poly or Fiberglass, <600 gal	0.500	0.00	208	0
0	ea	Tanks, Poly or Fiberglass, 600-3000 gal	1.000	0.00	609	0
0	ea	Tanks, Poly or Fiberglass, >3000 gal	2.000	0.00	1116	0
0	ea	Conveyors	0.125	0.00	250	0
5	ea	Pumps	0.100	0.50	100	500
1	ea	Lab Benches, Sort & Fold Tables	0.100	0.10	80	80
0	ea	Sludge Drying Sand Bed (excl. sand)	0.250	0.00	1564	0
0	ea	Sludge Dryer with Filter Press	0.250	0.00	5000	0
0	ea	HEPA Filters, Metal Frame 24x24x12	0.015	0.00	40	0
0	ea	Mobile Units, 40' (excl. eqpt.)	2.000	0.00	2100	0
30	m	Process Ductwork	0.015	0.45	60	1800
53	m	Buried Sewer Pipe (excl. soil)	0.020	1.06	18	954
31	m	In-plant Wastewater Pipe	0.020	0.62	5	155
0	m	Sink Drain Lines Under Floor (excl soil)	0.020	0.00	5	0
					=====	=====
					4.61	15889
					Days	lbs

Notes:

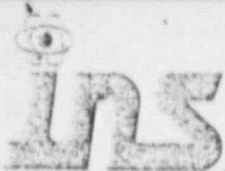
- 1 Walls likely needing decontamination typically include portions of these rooms: Water Treatment, Wash Room, Tank Farm. The walls often need decon only on the low parts.
- 2 Rooms likely to require removal of concrete slab and soil underneath typically include parts of these rooms: Water Treatment, Waste Storage, Sort Room, Wash Room, Tank Farm, Tank Room.
- 3 Rooms likely to require surface decontamination of concrete slab typically include these rooms: Storage, Loading Dock, Production Room, Mezzanine, Lab, Office.
- 4 Count each wet lint collector as two dry lint collectors.
- 5 Count special tanks as follows: Morris lamella=2 large steel tanks. Columbia lamella=1 large steel tank. Morris stainless steel pit=1 large and one medium steel tank. Non stainless steel pits are to be counted as concrete pits (assumed to leak).
- 6 If shaker screen has an integral tank, count that tank as one medium steel tank.

Process Descriptions:

Process 1: 4-person team. Remove equipment. Cut only as needed to help load it into the van. Ship to a waste segregator and processor. Charged by the pound.

Process 2: 4-person team. Remove and strip equipment in preparation for metal melt, removing controls, motor windings, and non-metallics. Ship to a metal melt facility.

Process 3: 6-person team. Remove and strip equipment; cut metal pieces into small accessible parts suitable for introduction into the mobile grit blaster and/or power washer. Survey and free release parts that are clean; ship remainder to waste processor or metal melt vendor.



INTERSTATE NUCLEAR SERVICES
A SUBSIDIARY OF UNIFIRST CORPORATION

RECEIVED
NRC
RIV WOODS

97 JUL -9 AM 10:06

June 3, 1997

Robert Gallagher
Radiation Control Program
Commonwealth of Massachusetts
305 South Street
Jamaica Plain, MA, 02130

*Note: this is now
an agreement state*

Re: License NRC-20-03529-01 Springfield, MA \$752,623

Dear Mr. Gallagher:

In order to account for inflation and changes to our facility, we periodically review our Decommissioning Funding Plan and update the decommissioning cost estimate. Attached is the new estimate for the INS nuclear laundry facility referenced above.

The surety we provide to your agency for future decommissioning takes the form of a bank Letter of Credit. This instrument is currently in force and is automatically renewed on its anniversary date, without adjustment to the amount, unless we notify the bank that the beneficiary (the regulatory agency) has authorized that it be amended.

Please review the attached information. When we get your written approval, we will instruct our bank to amend the Letter of Credit. They will then send it to your agency as soon as it is updated. Please call Mike Fuller or me if there are any questions.

Sincerely,

Les Case
Corporate Engineer
INS Corporation

cc: M. Fuller, INS
H. Murphy, UniFirst
B. Prange, NRC Region IV

Attachment: Cost estimate in NRC-recommended format

APPENDIX F
COST ESTIMATING TABLES

1. Planning and Preparation

Task	Table 1 Work Days					Calendar Days	Total Cost
	Super- visor	Foreman	H.P.	Clerical			
1. Prepare Documentation for Regulatory Agencies	5	10		5		10	\$7,191
2. Submit Decommissioning Plan to regulators	3	10		2		10	\$5,682
3. Develop Work Plans	4	8	3	1		8	\$6,607
4. Procure Special Equipment		5				5	\$1,887
5. Staff Training		2	5	2		5	\$3,176
6. Study of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	4	12	12	1		12	\$11,962
7. Other							
8. Total	16	47	20	11		50	\$36,504

Table 2

Unit Cost for Workers (Independent Contractors)			Worker Cost Per	
Position	Basic Salaries (\$/yr)	Overhead Rate	Year	Day
Supervisor	\$76,000	78%	\$135,280	\$541
Foreman	\$53,000	78%	\$94,340	\$377
Craftsman	\$33,000	78%	\$58,740	\$235
Technician	\$30,000	78%	\$53,400	\$214
Health Physicist	\$60,000	78%	\$106,800	\$427
Laborer	\$21,000	78%	\$37,380	\$150
Clerical	\$20,000	78%	\$35,600	\$142

2. Decontamination/Dismantling of Radioactive Facility Components *

For details, see Waste Volume Summary

Table 3
Work Days

	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
1. Decon/dismantle:						
Sorting Hoods (D)*		2.2	4.3	6.5	2.2	\$2,808
Lint Collectors (D)		1.2	2.3	3.5	1.2	\$1,512
Washers & Dryers (D)		44.7	89.3	134.0	44.7	\$57,859
Lab & Work Benches (D)		6.9	13.9	20.8	6.9	\$8,984
Sink Drain (D)		0.9	1.7	2.6	0.9	\$1,123
Misc Equipment (D)		9.7	19.3	29.0	9.7	\$12,505
Mobile Units (D)		0.0	0.0	0.0	0.0	\$0
2. Decon/dismantle:						
Process Ductwork (D)		5.3	10.7	16.0	5.3	\$6,907
Air Filters & Fans (D)		3.7	7.4	11.0	3.7	\$4,769
Water Filters, Pumps, Pipe (D)		16.6	33.1	49.7	16.6	\$21,454
Above-ground Tanks (D)		23.9	47.8	71.8	23.9	\$30,992
Washer Drain Trench & Pit (W)		10.6	21.2	31.8	10.6	\$13,736

*(D): Decontaminate most of the component to unrestricted release levels.

*(W): Package the component and dispose at a low-level waste site.

Table 3 (continued)
Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
3. Decon/Dis- mantle Building						
-Floors and Walls		29.0	58.0	87.0	29.0	\$37,579
4. Decon/Dis- mantle Service Facilities						
-Maintenance Shop						
-Decontamination						
-Ventilation Systems		See Page F-2				
-Other						
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhumed and package contaminated soil)		See Page F-2				
-Remove Sewer Discharge Pipe Line to First Manhole		6.1	12.1	18.2	6.1	\$7,861

Table 3 (continued)
Work Days

Task	Super- visor	Fore- man	Tech- nicians	La- borer	Calendar Days	Total Cost
6. Monitor for compliance reclean and remonitor.		18	36	36	18	\$20,634
7. Total of Table 3					179	\$228,723

Table 4

Equipment/Supply =====	Quantity =====	Rate =====	Cost =====
Mobile Decon Unit (Transport, Consumables)	1	14000	\$14,000
Plasma arc welder rental per month	4	350	\$1,400
Air compressor (Sullair 185) rental per month	5	650	\$3,250
Five-head floor scabbler rental per week	4	450	\$1,800
Hand scabbler (needle scaler) purchase	1	350	\$350
HEPA Vacuum Purchase	1	2200	\$2,200
Dozer with operator per hour	40	75	\$3,000
			=====
Total Equipment Rental and Purchase			\$26,000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Class A (unstable) Waste	Volume (m ³)	No. of Containers	Type of Container	Unit Cost of Container	Total Container Cost
Total	69	26	B-25	\$300	\$7,800

Table 6

Waste Type= Class A unstable	No. of Shipment	Unit Cost for Shipping incl. driver	Round Trip Distance Shipped	Vendor	Trans- portation Cost	
Soil	3	\$2.00	per mile	4802	Envirocare	\$28,812
Eqpt	1	\$2.00	per mile	1694	MSC	\$3,388
	=====					=====
Total	4					\$32,200

Table 7

Direct Burial Charge, including all fees
Direct Burial Vendor

\$3,180 per m³
Envirocare

Class A Unstable Waste
Soil and Concrete Rubble

Class A Unstable Waste
Equipment sent to Waste Processor

Burial Volume (m ³)	Unit Cost of Burial	Total Burial Cost	Approx Volume (m ³)	Approx Density (lb/m ³)	Actual Weight (lbs)	Rate (\$/lb)	Charge (\$)
68.6	\$3,180	\$218,067	52	500	25829	\$1.40	\$36,161

Container required
Direct burial
No processing

No container needed for equipment.

Lab Waste Analysis \$10,000

Total: Bury, Process, Lab Analysis \$264,228

4. Restoration of Contaminated Areas of Facility Ground

Table 8
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Backfill and Restore Site		5	5		5	\$3,204

5. Final Radiation Survey

Table 9
Work Days

Task	Sup'visor	Foreman	H.P.	Clerical	Calendar Days	Total Cost
Survey and Report		8	3	3	8	\$3,439

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10
Work Days

Task	Supervisor	Foreman	Clerical	Calendar Days	Total Cost
Table 10 is not applicable. Site will be free released.					\$0

Summary:

Table 1: Planning and Preparation	\$36,504
Table 3: Dismantling and Decontamination	\$228,723
Table 4: Equipment Rental	\$26,000
Table 5: Containers for Radwaste	\$7,800
Table 6: Transportation of Radwaste	\$32,200
Table 7: Waste Processing/Disposal	\$264,228
Table 8: Site Restoration	\$3,204
Table 9: Final Radiation Survey	\$3,439
Table 10: Site Stabilization and Surveillance	\$0
	=====
Sub Total	\$602,098
Contingency (25%)	\$150,525
Final Total	\$752,623

Process 1 Applied to Soil, Concrete, Rubble

Qty	Unit	Component	Calendar Days per unit	Calendar Days Total	Waste (m ^ 3) per Unit	Waste (m ^ 3) Total
21	m	Concrete Drain Trenches & Soil Under	0.200	4.20	0.290	6.09
140	m	Soil Adjacent to Buried Sewer Line	0.030	4.20	0.050	7.00
20	m	Soil Adjacent to Sink Drains Under Floor	0.030	0.60	0.015	0.30
40	m ^ 2	Concrete Pit Wall and Soil Behind (Note 5)	0.100	4.00	0.150	6.00
16	m ^ 2	Concrete Pit Bottom and Soil Under (Note 5)	0.150	2.40	0.500	8.00
80	m ^ 2	Wall Area Likely Needing Decon (Note 1)	0.015	1.20	0.001	0.08
560	m ^ 2	Concrete Floor & Soil Underneath (Note 2)	0.030	16.80	0.060	33.60
***	m ^ 2	Conc. Floor, Surface Contam Only (Note 3)	0.010	11.00	0.006	6.60
0.9	m ^ 3	Sand from Sludge Drying Tanks	0.100	0.09	1.000	0.90
				44.49		68.57
				Days		m ^ 3

Process 3 Applied to Equipment
Includes Grit Blast or Power Wash Decon

Qty.	Unit	Component	Calendar Days per unit	Calendar Days Total	Waste Pounds per Unit	Waste Pounds Total
==	==	=====	=====	=====	=====	=====
4	ea	Large Washers, >200 lbs Cap'y	5.417	21.67	1760	7040
1	ea	Small Washers, <=200 lbs Cap'y	3.233	3.23	560	560
3	ea	Large Dryers, >200 lbs Cap'y	5.500	16.50	1360	4080
1	ea	Small Dryers, <=200 lbs Cap'y	3.250	3.25	260	260
5	ea	HEPA Exhaust Fans	0.167	0.83	0	0
1	ea	Sorting Hoods	2.167	2.17	500	500
6	ea	Laundry Monitors (ALM)	1.233	7.40	140	840
1	ea	HEPA Filter Housings with Plenum	2.167	2.17	340	340
1	ea	Shaker Screen Water Filters (Note 6)	1.125	1.12	300	300
0	ea	Compactors	1.125	0.00	220	0
2	ea	Floor Scales	1.083	2.17	70	140
1	ea	Personnel Monitors	0.083	0.08	0	0
1	ea	Lint Collectors, Dry Type (Note 4)	1.167	1.17	110	110
0	ea	Bag or Respirator Dryers	0.625	0.00	60	0
0	ea	Small Metal Tanks <600 gal	0.583	0.00	165	0
2	ea	Medium Metal Tanks 600-3000 gal	1.167	2.33	482	964
1	ea	Large Metal Tanks >3000 gal (Note 5)	2.333	2.33	884	884
1	ea	Tanks, Poly or Fiberglass, <600 gal	0.583	0.58	42	42
2	ea	Tanks, Poly or Fiberglass, 600-3000 gal	1.167	2.33	122	244
7	ea	Tanks, Poly or Fiberglass, >3000 gal	2.333	16.33	223	1562
0	ea	Conveyors	1.125	0.00	25	0
12	ea	Pumps	0.067	0.80	100	1200
26	ea	Lab Benches, Sort & Fold Tables	0.267	6.93	4	104
0	ea	Sludge Drying Sand Bed (excl. sand)	0.667	0.00	626	0
1	ea	Sludge Dryer with Filter Press	1.208	1.21	1920	1920
20	ea	HEPA Filters, Metal Frame 24x24x12	0.034	0.68	8	160
0	ea	Mobile Units, 40' (excl. eqpt.)	6.333	0.00	420	0
130	m	Process Ductwork	0.041	5.33	12	1560
140	m	Buried Sewer Pipe (excl. soil)	0.013	1.87	18	2520
400	m	In-plant Wastewater Pipe	0.033	13.33	1	400
20	m	Sink Drain Lines Under Floor (excl soil)	0.013	0.27	5	100
				=====		=====
				116.09		25829
				Days		lbs

Notes:

- 1 Walls likely needing decontamination typically include portions of these rooms: Water Treatment, Wash Room, Tank Farm. The walls often need decon only on the low parts.
- 2 Rooms likely to require removal of concrete slab and soil underneath typically include parts of these rooms: Water Treatment, Waste Storage, Sort Room, Wash Room, Tank Farm, Tank Room.
- 3 Rooms likely to require surface decontamination of concrete slab typically include these rooms: Storage, Loading Dock, Production Room, Mezzanine, Lab, Office.
- 4 Count each wet lint collector as two dry lint collectors.
- 5 Count special tanks as follows: Morris lamella=2 large steel tanks. Columbia lamella=1 large steel tank. Morris stainless steel pit=1 large and one medium steel tank. Non stainless steel pits are to be counted as concrete pits (assumed to leak).
- 6 If shaker screen has an integral tank, count that tank as one medium steel tank.

Process Descriptions:

Process 1: 4-person team. Remove equipment. Cut only as needed to help load it into the van. Ship to a waste segregator and processor. Charged by the pound.

Process 2: 4-person team. Remove and strip equipment in preparation for metal melt, removing controls, motor windings, and non-metallics. Ship to a metal melt facility.

Process 3: 6-person team. Remove and strip equipment; cut metal pieces into small accessible parts suitable for introduction into the mobile grit blaster and/or power washer. Survey and free release parts that are clean; ship remainder to waste processor or metal melt vendor.